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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,642	04/12/2004	Craig R. Horne	3275.06US03	1933
62274	7590	10/04/2007		
DARDI & ASSOCIATES, PLLC 220 S. 6TH ST. SUITE 2000, U.S. BANK PLAZA MINNEAPOLIS, MN 55402			EXAMINER HOFFMANN, JOHN M	
			ART UNIT	PAPER NUMBER
			1791	
			MAIL DATE	DELIVERY MODE
			10/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/822,642	HORNE ET AL.	
	Examiner	Art Unit	
	John Hoffmann	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 20,25,26,28,31-39,41 and 43-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20,25,26,31-39,41 and 43-47 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/17/2007 has been entered.

### ***Claim Objections***

Claim 28 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 28 depends from claim 22; there is no longer a claim 22. Claim 28 is not further treated on its merits.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20,25,26,28,31-39,41 and 43-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 and 31: there is no antecedent basis for "the resulting structure". The term "resulting structure" only occurs twice in the specification – but there is no indication/description/definition as to what this is. There is also no antecedent basis for "the fully densified material mass density".

It unclear if the density of claim 41 and 43 is suppose to be interpreted as being a value "between" 0.02 and 0.55, or if the literal meaning that it goes "from" 0.02 to 0.55 (i.e. it starts out as 0.02 and then reaches 0.55. (the same applies to the "from" limitation of claims 41-43. There is no antecedent basis fort "the fully densified material mass density"; it unclear if this means that the material must be fully densified. It is also unclear if the range is suppose to be interpreted as 2%-55% or 0.02%- 0.55% or if it could also be interpreted in other ways.

### ***Claim Rejections - 35 USC § 103***

Claims 20,25,26,31-39,41 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks 4749396 in view of Miller 4501602, Berkey 4684384 and Kobayashi 3957474.

First, as noted by Applicant on page 9 of the current (9/20/2007) response: "Claim 20 has one method step, which involves inserting a coating insert." Even Examiner cannot find any other explicit step, examiner is interpreting the claim as requiring no more than one step. The step of "inserting an insert within a glass preform structure" is disclosed at col. 4, lines 49-68. It is noted that Examiner's dictionary

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indicates that the word “within” can mean “into” – and Examiner could find nothing in the specification or applicant’s arguments which suggests this might be an unreasonable reading.

As to the “to obtain a bimodal radial distribution in dopant concentration in the resulting structure”: Examiner first notes that there is no antecedent basis for “the resulting structure.” Examiner then reviewed the specification to see what this is.

Although the term was used twice, there was not described/defined. Page 71 at lines 11-13, Applicant refers to a “resulting optical structure” and gives an example of a waveguide core.

In order to examine claims, an examiner first interprets the independent claim, by giving the terms thereof the broadest reasonable interpretation in their ordinary usage in context as they would be understood by one of ordinary skill in the art in light of the written description in the specification, including the drawings, unless another meaning is intended by appellants as established in the written description of the specification, and without reading into the claims any limitation or particular embodiment disclosed in the specification. See, e.g., *In re Am. Acad. Of Sci. Tech. Ctr*, 267 F.3d 1359, 1364, 70 USPQ2d 1 827, 1830 (Fed. Cir. 2004); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Thus, the plain language of “to obtain a bimodal radial distribution in dopant concentration in the resulting structure” is an intention, that is to obtain the distribution in any resulting structure at any time. Compare to the preamble which refers to “for forming an optical fiber preform” – the recitation of any such formation is not mentioned/required in claim 20. Also compare to other phrases like “to obtain a

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saleable fiber” or “to obtain lots of money”. The plain meaning of “to obtain” reflects an intended use.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Hicks insertion step could be “to obtain” a bimodal distribution fiber – such by further steps. This is NOT to be interpreted as a finding that Hicks discloses obtaining such or that such would have been obvious. Rather, that the present claim uses a broad “to obtain” limitation which reflects an intention – a mental step – which fails to define over Hicks. Examiner has given FULL WEIGHT to the “to obtain” limitation as indicated in *In re Casey*.

Hicks does not disclose the rare earth and the metal element dopant in the cladding, but does disclose the use of dopants. Miller from col. 3, lines 64 to col. 4, lines 17, as well claim 2 (and lines 8-9 of claim 1) which reasonably discloses using combinations of rare earths and non-rare earths in glass. See also col. 1, lines 43-44 which indicate that non-rare earths are common modifiers in glass. It would have been obvious to add the common modifiers for any of their well-known modifying abilities. As

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to silica – it is well understood that most glasses comprise silica (SiO<sub>2</sub>) – see references –in particular both of Miller's specific glass examples (7&8) have SiO<sub>2</sub>.

Hicks also does not disclose the 0.02 to 0.55 density range. However it is inherent that it cannot be lower than 0 nor higher than 1.00. Thus the present claim covers half of the possible range.

#### **2144.05 [R-1] Obviousness of Ranges**

See MPEP § 2131.03 for case law pertaining to rejections based on the anticipation of ranges under 35 U.S.C. 102 and 35 U.S.C. 102/103.

##### **I. OVERLAP OF RANGES**

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (The prior art taught carbon monoxide concentrations of "about 1-5%" while the claim was limited to "more than 5%." The court held that "about 1-5%" allowed for concentrations slightly above 5% thus the ranges overlapped.); In re Geisler, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997) (Claim reciting thickness of a protective layer as falling within a range of "50 to 100 Angstroms" considered prima facie obvious in view of prior art reference teaching that "for suitable protection, the thickness of the protective layer should be not less than about 10 nm [i.e., 100 Angstroms].") The court stated that "by stating that suitable protection is provided if the protective layer is about 100 Angstroms thick, [the prior art reference] directly teaches the use of a thickness within [applicant's] claimed range."). Similarly, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.).

"[ A ] prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." In re Peterson, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). However, if the reference's disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus. Id. See also In re Baird, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); MPEP § 2144.08.

Since applicant's range covers over half of the prior art range, a prima facie case of obviousness exists. It would have been obvious to perform routine experimentation to determine the optimal process parameters.

See also prior office actions which discuss the references and the limitations in the dependent claims.

Berkey teaches that a laser can be used to heat the reactants in a CVD process for making coatings of glass soot on optical fiber preforms (see col. 1, lines 23-30). Kobayashi discloses it is better to use a laser rather than a flame when making a soot-based fiber preform when reacting silicon chloride and oxygen (col. 1, lines 36-44 and col. 3, line 2) because of the problem with water created by flames.

It would have been obvious to perform the Hicks CVD heating with a laser, since such is a known superior method of creating a soot layer – by virtue of no water in the preform.

As to the use of a chamber, Kobayashi discloses the use of a chamber. It would have been obvious to use a chamber to protect people from the hi-power laser and deadly chlorine gas.



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Claims 31-38, 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks 4749396 in view of Miller 4501602, Berkey 4684384, Kobayashi 3957474 and Bi 5958348.

Claim 31: see how Hicks, Miller, Berkey and Kobayashi were applied in prior Office actions. Now, claim 31 has been amended to require that the light beam passes through the reactant stream without striking the insert. Neither Hicks, Miller, Berkey nor Kobayashi teach passing the laser through the stream without striking the insert.

Col. 2, lines 16-24 of Bi discloses that Bi's method is efficient and has high production capacity. It is also noted that applicant admits that laser pyrolysis is standard (page 14, line 15 of the present specification). It would have been obvious to use the Bi pyrolysis (i.e. without the laser hitting the insert) to perform the Hicks coating.

As to the forming occurring in a flowing reactor: Examiner first interprets "flowing reactor", by giving the term the broadest reasonable interpretation in their ordinary usage in context as they would be understood by one of ordinary skill in the art in light of the written description in the specification, including the drawings, unless another meaning is intended by appellants as established in the written description of the specification, and without reading into the claims any limitation or particular embodiment disclosed in the specification. See, e.g., *In re Am. Acad. Of Sci. Tech. Ctr.*, 267 F.3d 1359, 1364, 70 USPQ2d 1 827, 1830 (Fed. Cir. 2004); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). As indicated at page 46, lines 15 –17 of the

present specification, application 10/119,645 is incorporated by reference. And Gardner 6919054 (based on that application) at col. 5, lines 56-65 suggests that all that is required for a "flow reactor" is a reaction chamber. Thus it is deemed that any chamber of any size and shape, no matter how large or small, which can or does contain a reaction reads on the claimed "flowing reactor". A room is a chamber: it would have been obvious to perform all of the steps in a single room/chamber/building so as to make the article without undue time delays, transportation costs, etc. It is noted that Examiner can not reasonably derive any other definition for "flowing reactor" which would exclude a room, consistent with applicant's disclosure that the reactor comprises a chamber, and yet read on applicant's Figure 1 apparatus.

To paraphrase the above: It would be obvious to use the Bi method to make the coating material for the Hicks invention (as modified by the secondary references). It is noted (from col. 7, lines 29-37 of Miller) it is conventional (for over 20 years) to make preforms by directly depositing the soot on a target, as well as collecting the soot for later deposition. It would generally not be invention to separate or incorporate the specific steps of creating the soot, and depositing the soot – either by location or time.

**From MPEP 2144.04**

**C. Changes in Sequence of Adding Ingredients**

Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

**From MPEP 2144.04**

**C. Making Separable**

In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961) (The claimed structure, a lipstick holder with a removable cap, was fully met by the prior art except that in the prior art the cap is "press fitted" and therefore not manually removable. The court held that "if it were considered desirable for any reason to obtain access to the end of [the prior art's] holder to which the cap is applied, it would be obvious to make the cap removable for that purpose.").

***Response to Arguments***

Applicant's arguments filed 20 August 2007 have been fully considered but they are not persuasive.

Regarding the "from...to..." limitations – now only in claims 41 and 43, Applicant argues that the claim is not referring to a temporal change. This may be, but the claim is indefinite nevertheless. The word "from" requires a beginning. Examiner assumes that it is a beginning in a temporal sense. The plain meaning is the factor begins at 0.02. It is assumed that applicant intends claims 41 and 43 to have this beginning, rather than being within the range – such as now claimed in claim 20. Examiner has no authority to assign some new meaning to "from" – the Office uses the plain meaning of from.

It is argued that Hicks does not teach forming a bimodal distribution of dopant concentration. This is not very relevant, because the claims do not require a forming step. Applicant admits this on page 9 of the response. Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is further argued that the prior art does not each inserting the insert “to form a bimodal radial distribution.” This too does not appear to be very relevant. The language “to form” signifies an intention – that is: for the purpose of making a resulting structure with the bimodal distribution. Intended use limitations are met by the prior art as discussed above. The claims do not require the creation of the resulting structure, thus it would be unreasonable for artificially require the claim to require such.

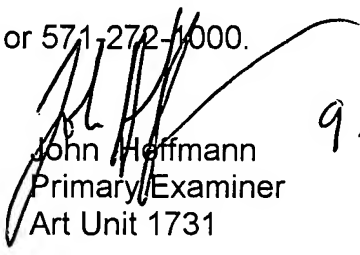
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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John Hoffmann  
Primary Examiner  
Art Unit 1731

9-28-07

jmh